Space Weather Forecast

Issued on Friday, 30 August 2024 at 00:28 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Moderate-class flares likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with only common class flares observed, the largest from just over the southeast limb. There are nine regions currently on the disc, with a moderately sized but compact region close to the southeast limb the most likely source of significant flares. This region has some apparent complexity, although its current location close to the southeast limb prevents accurate assessment. The other regions on the disc remain relatively simple, and mostly decaying or stable. However, a small region has emerged in the southeast quadrant and continues to exhibit slight growth.

No Earth directed Coronal Mass Ejection (CME) has been observed, as although a couple of weak eruptions of ropes of plasma (filaments) were seen from the northwest disc, just before 29/0100 UTC and around 21/0610 UTC, analysis of the imagery has been inconclusive. Late in the day a disturbance of the corona occurred in the northeast quadrant, but currently no associated CME has been observed. Also, if a CME has been produced then it is unlikely to be Earth directed.

Solar Wind / Geomagnetic Activity: Solar wind parameters continued to show ongoing but reducing influence from a CME that arrived early on 27 Aug. Solar winds remains speeds persisted at background levels, while the Interplanetary Magnetic Field decreased from strong to moderate levels. The north-south component off the field was predominantly positive, moderately to strongly so, then decreasing to become weakly positive. Geomagnetic activity has been Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) continued to be at background with no Solar Radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is forecast with Moderate-class flares likely and a slight chance of isolated Strong flares occurring. However, there is a chance of temporary weak solar wind enhancements from a small coronal hole today (30 Aug), although confidence is low. Another slight solar wind enhancement, from a thin coronal hole almost centre disc, may arrive through day 4 (2nd Sept). Geomagnetic activity is expected to be mainly Quiet with isolated Unsettled intervals, although with a chance of Active intervals days 1 and 4 (30 Aug and 2 Sep).

Solar Wind /Geomagnetic Activity: There are no Earth-directed CMEs. Current CME enhancement is forecast to continue to gradually wane.

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Met Office Space Weather Forecast

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to be at background with only a slight chance of Solar Radiation storms occurring.

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	5	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	55	55	55	55
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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